

Maricopa County Air Quality Department

2012 ANNUAL REPORT



Working to provide clean air to Maricopa County residents and visitors so they can live, work and play in a healthy environment.



Maricopa County
Air Quality Department

Message from the Director

Welcome to the second Maricopa County Air Quality Department annual report. For our air quality, 2012 was both a challenging and rewarding year. We again had several giant dust storms (haboobs) in the summer and a difficult ozone season due to hot/dry weather conditions. Likewise, we had fine particulate exceedances due to fireplace activity and inversions on No Burn Days in the winter.

Despite those challenges, we successfully worked with our partners at the Arizona Department of Environmental Quality (ADEQ) and the Maricopa Association of Governments (MAG) to submit the 5% Plan addressing our PM₁₀ (dust) issue – a major accomplishment. The Environmental Protection Agency (EPA) also determined that Maricopa County is in attainment with the 1997 ozone standard, but is still challenging us to meet the 2008 ozone standard.



*William (Bill) D. Wiley, P.E.
Director*

Our outreach efforts included the release of the first mobile application for Maricopa County: the Clean Air Make More Mobile App. We also expanded our outreach activities to fully include Spanish language communities. Collaborative efforts with ADEQ and the Phoenix Center for the Arts resulted in a children's coloring book emphasizing the importance of keeping our air clean. In addition, our successful public-private Rapid Response program has actively avoided air quality exceedances at monitoring sites in Maricopa County. This program received an EPA Clean Air Excellence award in 2012. As a result of our process improvement efforts, we have reduced our dust permitting time frames from more than 12 days to 3½ days. Likewise, our compliance inspectors moved to a "zone" model that has improved efficiency and better balanced workload among inspection staff. We have also implemented a weekend complaint review and response program to supplement our weekday activities.

Moving forward, some continuing challenges include 5% Plan implementation – keeping the air clean throughout the valley. We also face potential nonattainment in 2014 for fine particulate matter (PM_{2.5}) due to the new lower annual fine particulate standard. In addition, the State Implementation Plan for the 2008 ozone standard is due in 2015, and we face the onset of a new, lower ozone standard to be proposed at the end of 2013.

2012 was certainly a busy year, but this is no time to slow down our efforts. Thank you for working with us on improving our air.





Haboob in Maricopa County, courtesy of National Geographic

During the summer of 2012 Mother Nature again showed her fury. Several major dust storms swept through the valley with huge clouds filled with dust and particulates. These storms brought dangerous air quality conditions to those suffering from respiratory and other health issues.

According to the National Weather Service there were nine massive storms that went through the valley in 2012. Primarily due to these storms, Maricopa County experienced 13 days where the levels of coarse particulates in the air exceeded the Federal Health Standard.

Maricopa County and other air quality agencies believe that these days were outside our ability to control. The department, and our sister agencies, Maricopa Association of Governments and the Arizona Department of Environmental Quality, are therefore petitioning the Environmental Protection Agency (EPA) to consider these days “exceptional events,” and not count them in our air quality compliance determination.

If EPA agrees that these exceedance days were “exceptional” then Maricopa County will be in attainment with the National Ambient Air Quality Standard (NAAQS) for Coarse Particulates for 2012. FIG.1, shows a three-year average of PM-10 exceedances, FIG.2, shows that should the exceptional events be excluded, there would not have been any monitors violating the PM-10 standard.

FIG. 1 Sites that Currently Violate the PM-10 NAAQS for 2012 without Exceptional Events Removed

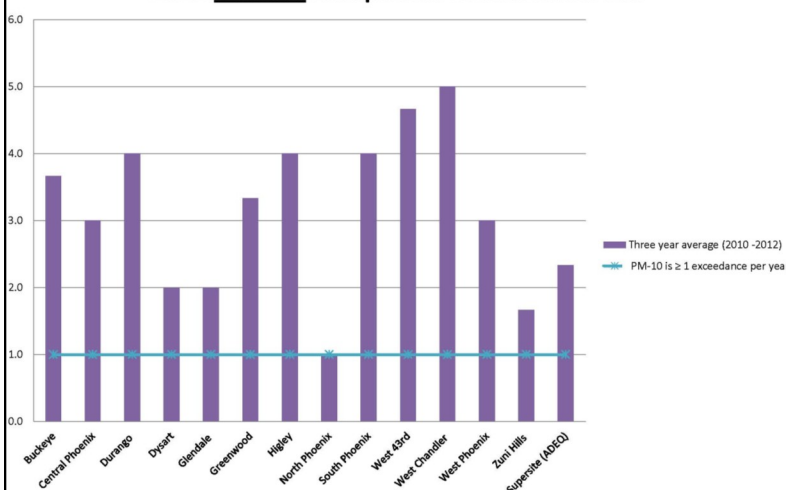
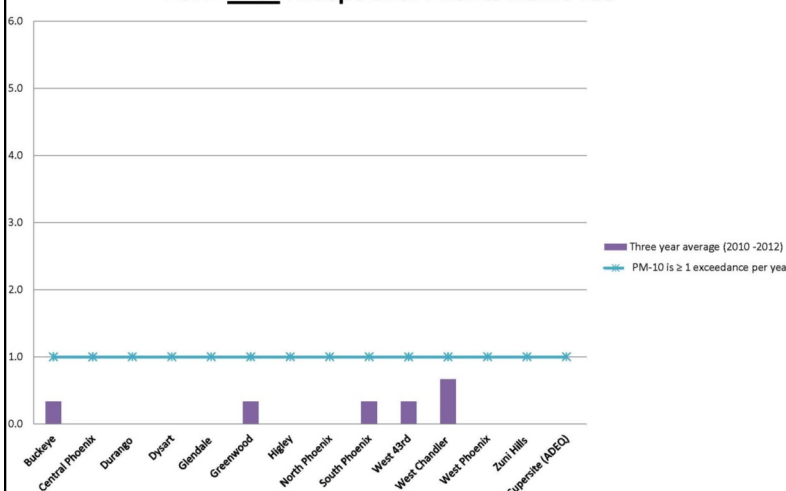


FIG. 2 Sites that Currently Violate the PM-10 NAAQS for 2012 with Exceptional Events Removed



After withdrawing the plan in January 2011, Arizona Department of Environmental Quality (ADEQ) submitted a revision of the region's 5% Plan for PM-10 to Environmental Protection Agency (EPA) on May 25, 2012. ADEQ withdrew the previous particulate matter air quality plan from EPA's review after the federal agency proposed to partially approve and partially disapprove the plan in September 2010.

Originally submitted in 2007, the 5% Plan calls for significant reductions in emissions of particulate matter 10 microns or less in size, also known as PM-10, from a variety of sources throughout the Valley.



ADEQ reported if the plan had not been withdrawn, EPA would have taken final action on January 28, 2011, resulting in sanctions for Maricopa County. Unless resolved, disapproval could also impact the construction of new large sources that release particulates within 18 months, and federal highway dollars after 24 months. EPA found the revised 5% Plan complete on July 20, 2012, thereby turning off the sanctions clock.

Work in support of the 5% Plan for PM-10 continued throughout the year with the documentation and submittal of exceptional events demonstrations for 18 of 22 exceedance days in 2011 and 9 out of 13 exceedance days in 2012 within the nonattainment area. All demonstrations were submitted to EPA by February 13, 2013.

Highlights of the revised plan include a new Dust Action General Permit administered by ADEQ and a commitment by our department to conduct a rule effectiveness study on Rules 310, 310.01 and 316. EPA action on the revised plan is pending.



Maricopa County's highly successful Rapid Response Notification System was established in June of 2011 in response to the county exceeding the PM-10 National

Ambient Air Quality Standards (NAAQS). The program is designed to provide real time monitoring information and immediate notification of, and response to, high levels of particulate matter, PM-10, which could be due to local human activity.

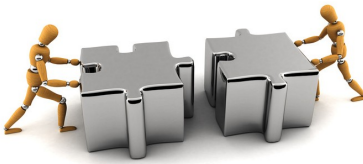
Thanks to funding from the Maricopa Association of Governments, the Maricopa County Air Quality Department installed 16 upgraded monitors that send wireless updates every five minutes. Previously, monitors would only transmit hourly reports. The air quality data is transmitted and analyzed 24 hours a day, seven days a week.

If air quality values reach a certain level, the system alerts one of the county's 40 air quality inspectors, who are on-standby during off-work hours. Data is then analyzed to determine if the source is a dust storm or potentially human-caused. If it is determined that it is likely human caused, an alert is sent out to those signed up in the local area via email, text message, Twitter and Facebook. Citizens who have voluntarily signed up, permit holders, businesses, governments and associations who are within a four-mile radius of the monitor with the high readings will receive the alerts. A Rapid Response Inspector is also sent to the scene.

Once alerted, businesses, residents and partnering agency stakeholders help to maintain compliance with air quality standards by stabilizing loose dirt in the area, or even halting dust-generating operations. Maricopa County is currently classified as "serious non-attainment." Besides protecting the health of our residents, it is imperative that the county change the classification. The area could lose nearly \$7 billion of federal funding, translating to approximately 215,000 jobs. To date, we have issued 22 alerts and documented at least three exceedances of the Air Quality Index that were prevented. Approximately 11 other exceedances may have been prevented but have not been able to be documented.



The program has received high praise and national recognition including a 2012 EPA Environmental Excellence Award, a NACo Award and recognition in the Associated General Contractors' America's Environmental Observer. More than 7,000 individuals, government entities, businesses and health agencies are signed up to receive alerts.



In 2012, the department was fully engaged in implementing significant Process Improvements in the Compliance, Permitting and Planning & Analysis Divisions to improve customer service, organizational effectiveness and reduce bureaucratic procedures.

Some examples include: holding permit open houses regularly to assist in permit applications; emailing general permits to applicants; accepting training fees on-site; implementing a new area inspection model (which reduces staff travel time and provides greater inspection continuity and consistency) reducing seven inspection forms to one; offering courtesy inspections by our Small Business Assistance program; developing standard operating procedures on rulemaking process for consistency and transparency.

Additional Process Improvement studies have been initiated in the Asbestos and Performance Test units which will be completed in early 2013.

To view a full listing of our Process Improvement efforts, visit our department's website and click on the Process Improvement tab under 'About Us.'



Air Monitoring in Maricopa County

The department maintains an active, ambient air monitoring network throughout the county. The equipment measures six criteria pollutants, including: carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide and lead. Three of those continue to be a pollution challenge for our region: Ozone, PM-2.5 and PM-10.

2012 Maricopa County Air Monitoring Data

days not meeting the standard

PM₁₀ = 13

PM_{2.5} = 5

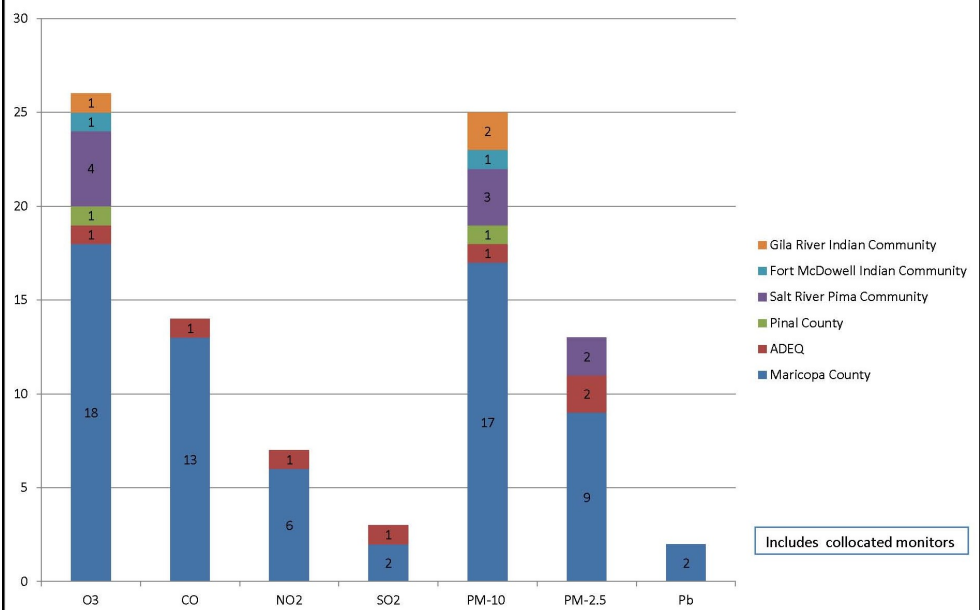
Ozone = 29

Air Monitoring (Fixed) Sites
24 Maricopa County sites
9 Other sites in the non-attainment area

63 active pollution monitors

Learn more about the department's [air monitoring network](http://maricopa.gov/aq) at maricopa.gov/aq.

FIG. 3 Number of Active Criteria Pollutant Monitors in the Phoenix Metro Area for 2013

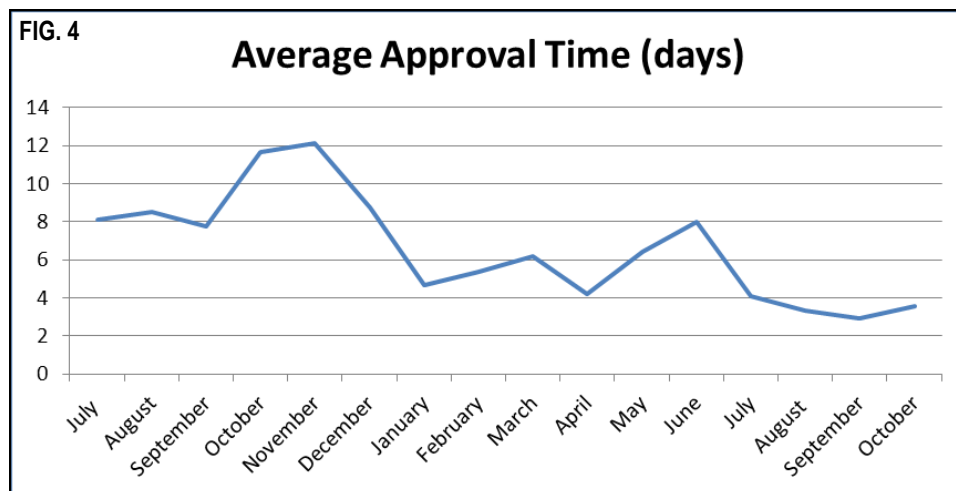


Permitting

The department issues air quality permits for a variety of sources. The time to issue permits decreased dramatically in 2012. Now to receive a New General Permit it will take an average of only seven days, a 61% decrease in time and well below the regulatory timeframe of 180 days.

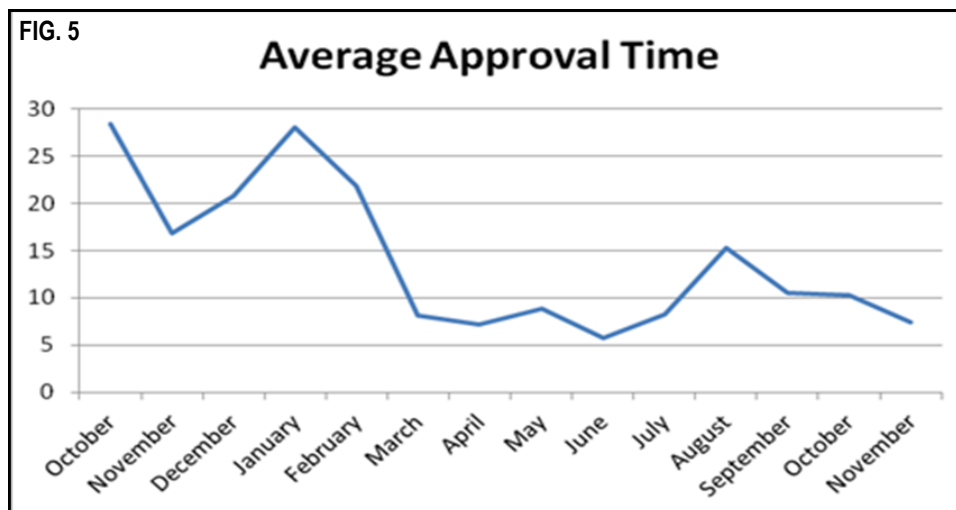
The average time to receive a new Non-Title V Permit fell 62%, to 33 days. The regulatory timeframe for Non-Title V Permits is 195 days and 100% of these new permits were issued within the guidelines.

Dust Control Permit Applications from July 2011 to October 2012



The slight uptick on approval time in June 2012 is due to the loss of an employee to the group – the position was replaced by July 2012.

Authority to Operate Permit Applications from October 2011 to November 2012



Air Quality Permits in Maricopa County

2,291 Dust applications
 839 NESHAP notifications
 3,275 Subcontractors registrations
 2,725 General permits
 1,522 Non-Title V permits
 32 Title V permits

Average Time to Permit (business days)

7.0 General
 33.0 Non-Title V
 3.5 Dust

2012 Rules Completed

Rule 313: Incinerators, Burn-Off Ovens, and Crematories
 Rule 314: Open Outdoor Fires and Indoor Fireplaces at Commercial and Institutional Establishments
 Rule 321: Municipal Solid Waste Landfills
 Rule 358: Polystyrene Foam Operations
 Rule 360: New Source Performance Standards
 Rule 370: Federal Hazardous Air Pollutant Program
 Rule 371: Acid Rain
 Appendix G: Incorporated Materials

Planning & Analysis

The Planning and Analysis Division writes air pollution rules and ordinances, compiles emissions inventories for pollution sources within Maricopa County and analyzes air pollution trends. It also supports ADEQ and MAG on nonattainment plan submittals.

In 2012, the Maricopa County Air Quality Department worked with stakeholders in the development of the Enhanced Regulatory Outreach Program. This framework is for all county departments to conduct the rulemaking process with optimum transparency and increased opportunities for public participation. Information on the Enhanced Regulatory Outreach Program can be found at <http://www.maricopa.gov/regulations/>.

For Planning and Analysis information visit http://www.maricopa.gov/airquality/divisions/planning_analysis/Default.aspx. The rules and ordinances revised and adopted by the Maricopa County Board of Supervisors in 2012 are outlined at left.

Trip Reduction Program

The Trip Reduction Program [TRP] serves to reduce air pollution and traffic congestion by encouraging employer promotion of alternative modes of transportation, including carpooling/vanpooling, buses, light rail, bicycling, walking, and alternative fueled vehicles, as well as, alternative/compressed work schedules and telecommuting.

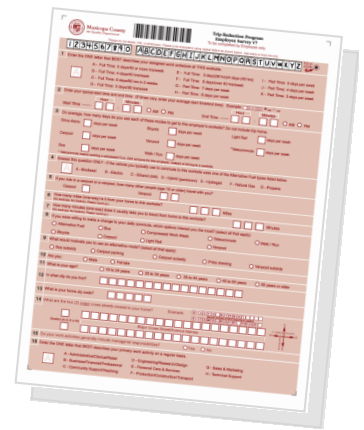
In 2012, the Trip Reduction Program:

- Served 1,178 employers at 3,009 work/school sites
- Administered annual survey to some 687,000 employees/driving-aged students
- Increased use of the 'e-survey' by 18%, reducing paper waste
- Participants reduced weekly commuting by 27,179,450* miles
- Participants saved 14,511 tons of pollution (48.7 miles/lb.)

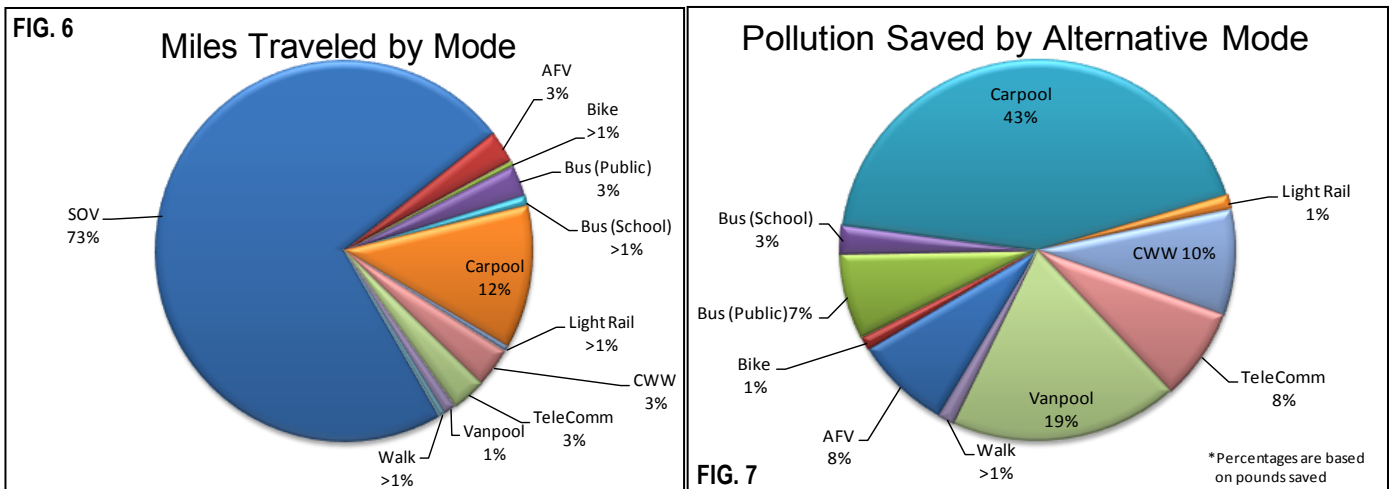


* All calculations are based on a commuter's round-trip to/from a worksite or school.

Current estimates show that the daily Vehicle Miles Traveled (VMT) for our region totals approximately 80 million miles traveled each day. By 2015, the daily VMT has been projected to grow to around 126 million miles per day. Despite the use of cleaner vehicles and cleaner burning fuels, our regional vehicle fleet remains responsible for a major source of air pollution from carbon monoxide, ozone and particulate matter.



The TRP helps employers and schools with driving age students meet compliance requirements.



The charts above reflect information acquired from 2012 TRP survey response data.

Dust Control Training

Maricopa County Air Quality Department provides dust control training for the following rules: Rule 310, Fugitive Dust from Dust-Generating Operations, and Rule 316, Nonmetallic Mineral Processing rules. Site superintendents, permit holders, water truck and water pull drivers among others, must attend training. The purpose is to ensure those working in dust-generating operations are aware of air quality regulations and how to prevent problems.

The department conducted 90 Rule 310 dust control training classes in 2012 (47 in-house, 27 off-site). Additionally, there were approximately 16 city/town block permit training classes conducted. The department also conducted 21 Rule 316 dust control training classes last year (9 Basic; 12 Comprehensive). The following table shows the number of individuals trained in each category in 2012.

	Rule 310	Rule 316
Basic (in-house)	1,634	89
Comprehensive (in-house)	1,318	179
Basic (off-site; group)	1,222	0
Comprehensive (off-site; group)	701	0
City/Town Block Permit Basic	743	N/A
Total	5,618	268

More information on the department's Rule 310 and Rule 316 training may be found through the following channels:

On the web: www.maricopa.gov/eq, Search "Dust Control Training"

By phone: 602-372-1467

By email: aqdustcompliancetraining@mail.maricopa.gov



Compliance & Enforcement—2012

Inspections Conducted

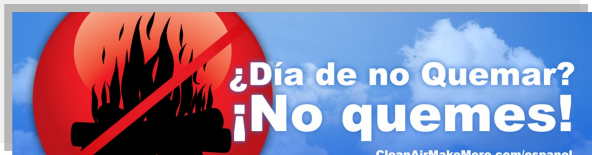
Rule 310 (dust)	5,886
Rule 310.01 (vacant lots)	5,137
Rule 316 (rock mining)	324
Non-Title V Permits	1,370
General Permits	2,132
Title V Permits	32
Synthetic minors	55
Asbestos	624

Complaints Received

Smoking Vehicle	1,969
All other	1,969

Notices of Violation Issued	759
Opportunity to Correct Issued	611

Enforcement Cases	378
Penalties Received	\$2,186,4400



Despite wood burning restrictions, a string of No Burn Day announcements and enforcement by the Air Quality Department, Maricopa County's air quality reached dangerous levels and failed to meet health standards for fine particulate matter, on several days during the holidays.

From December 21, 2012 to January 1, 2013, the Air Quality Department issued six No Burn Days based on the air quality forecasts and rising fine particulate pollution levels.

During that timeframe there were three days when the county exceeded the federal health standard. On New Year's Day 2013, seven of the eight monitors that measure PM-2.5 particulate matter, exceeded the standard. Three of those monitors, located in West Phoenix, South Phoenix and Glendale, registered levels that were more than double the health standard of $35\mu\text{g}/\text{m}^3$, on New Years' Day.

What is a No Burn Day?

The purpose of the No Burn Day is to avoid adding pollution to our air when the weather forecast suggests air quality will approach or exceed the federal health standard. These days typically occur when cold weather, inversion conditions and increased fireplace use are anticipated. You can see (and often smell) the gray smoky haze blanketing the valley during these days.

Wood burning restrictions are governed by Maricopa County Rule 314 for commercial burning and Ordinance P-26 for residential wood burning. While the regulations restrict general fireplace use and outdoor fires, there are exemptions to the rule including for Environmental Protection Agency approved wood burning devices, gas powered fires or fires for food preparation. Protecting our lungs requires public awareness of the impact of wood burning on our health on No Burn Days each of us needs to sacrifice for the community good.

There are several ways you can learn about No Burn Day restrictions:

- ⇒ Log on to www.CleanAirMakeMore.com to find out if today is a No Burn Day.
- ⇒ Sign up to receive email alerts or text messages when a No Burn Day is issued at www.CleanAirMakeMore.com and click "Make the Commitment."
- ⇒ Download our mobile app on [iTunes](#) for iPhone users or on [Google Play](#) for Android users.
- ⇒ Call the Maricopa County Burn Line at (602) 506-6400 for a recorded message in English and Spanish.
- ⇒ **Like** us on Facebook www.facebook.com/CleanAirMakeMore
- ⇒ **Follow** us on Twitter @CleanAirMakeMor



CleanAirMakeMore.com



Clean air requires the actions of every individual in Maricopa County



The Maricopa County Air Quality Department's Clean Air Make More Mobile Application provides air quality forecasts, air quality restrictions, and the ability to report an air quality violation. The app has been downloaded nearly 5,000 times since its launch in September 2012. Recognizing that many Maricopa County residents typically spend more time on their smartphones and tablets than any other device, the department developed the Clean Air Make More Mobile App to provide a resource for residents to easily access real-time information about the air they breathe.

The Clean Air Make More Mobile App features:

- Air quality forecast for three days, including ozone, carbon monoxide, PM-10 and PM-2.5 levels
- Air quality index levels (good, moderate, unhealthy and hazardous) and definitions
- Air quality restrictions (wood burning, leaf blower use, off-road vehicle use)
- "Report a violation" option, similar to what is found on www.CleanAirMakeMore.com, where users can report an air quality violation or a smoking vehicle

Additional ways to stay in touch with the Air Quality Department for news, tips and other ways to improve air quality: www.CleanAirMakeMore.com, Facebook and Twitter.

The [Clean Air Make More app](#) is free to download and use and is available on iTunes for [iPhone](#) and [iPad](#) and on Google Play for [Android](#).

Financial Outlook

Maricopa County Air Quality Department is primarily funded by fees, grants and settlement funds. In fiscal year (FY) 2012 (July, 2011—June, 2012) the department enjoyed a year of financial stability after three years of staff layoffs, which occurred because of the economic downturn.

The department ended its fiscal year with a slight net loss of \$84,419 due to grant revenues that were budgeted for receipt in FY 2012 but were received after the close of the fiscal year. This fiscal stability was due to a combination of reduced expenditures as a result of efficiencies and fiscal restraint.

In FY 2012 the county's general fund continued to supplement the department's budget by providing \$763,350 for personnel expenditures and \$474,901 for air monitoring equipment.

FIG. 8 FY 2012 AIR QUALITY REVENUE (SOURCES)
\$14,182,416

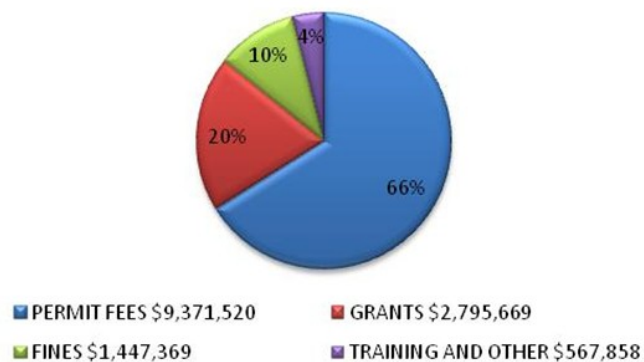
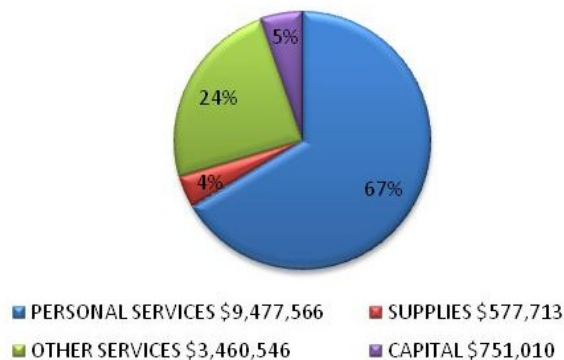


FIG. 9 FY 2012 AIR QUALITY EXPENDITURES (USES)
\$14,266,835



Spanish Outreach Program



Maricopa County's Hispanic community is a significant ethnic force accounting for more than 30 percent of the county's population. In order to increase air quality awareness in the Spanish language portion of that community, the Air Quality Department enhanced its Clean Air Make More initiative to try to reach these constituents.

As part of this new initiative, the department recorded and participated in live interviews with Univision and Telemundo television stations and Entravision Radio. The Maricopa County Air Quality Department (MCAQD) also initiated an aggressive ad campaign during "No Burn" season, developed Public Service Announcements and published bi-weekly newsletters. In addition, a Clean Air Make More Spanish Website was launched. Note that dust field guides and children's coloring books are available in Spanish and English to help promote positive air quality actions.

Planning & Analysis Division Director

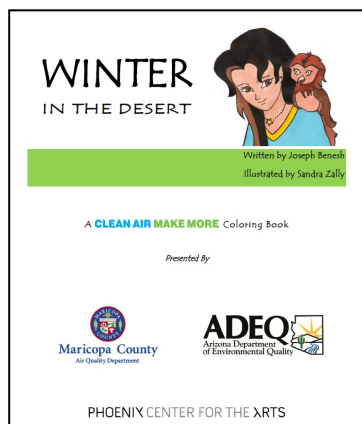
In October, the department welcomed Deborrah "Corky" Martinkovic as the Planning & Analysis Division Director. In this role, Corky manages the staff that works on the county's air quality rules and regulations, emissions inventories and the newly added responsibilities for increased air quality analysis utilizing air quality models and Geographic Information Systems.

Corky brings nearly 13 years of direct air quality experience to this role from her work in the Planning Section at the Arizona Department of Environmental Quality (ADEQ), where she was the main contact for regional haze planning as well as other state implementation plans (SIPs). Born in California and raised in Phoenix, Corky taught high school and worked in the area of recycling and waste management before turning to work in air quality. Corky Martinkovic may be reached at (602) 506-6731 or by email at CorkyMartinkovic@mail.maricopa.gov.



Children's Coloring Book

In December, MCAQD released a new coloring book entitled "Winter in the Desert." The 16-page book was designed to be used as a tool for students to learn about air pollution, how to help prevent air pollution and become good environmental stewards.



The book is a collaborative effort among MCAQD, Arizona Department of Environmental Quality and Phoenix Center for the Arts. The coloring book can be downloaded at

http://cleanairmakemore.com/?attachment_id=2221

"Winter in the Desert" was released in December when the Maricopa County area typically has its highest levels of smoke from woodburning fireplaces, stoves and chimineas during the holiday No Burn season.

Although Maricopa County Air Quality Department (MCAQD) is proud of its accomplishments in 2012, we are not resting on our laurels. In 2013, we will continue to pursue our goal of improving air quality and the health of the county's citizens by increasing efficiency and customer service.

Looking ahead:

- MCAQD plans to accept online permit applications and fees and to be able to accept in person permit applications at our main office in 2013.
- To facilitate the latter, we are updating the signage on our Central building to make it easier for our customers to locate and conduct business with us.
- Building on the success of our Rule 310 (dust) training program, we will be expanding our training programs for other stakeholders including small businesses.
- We are moving forward with the county's new Enhanced Regulatory Outreach model that allows more transparency and easier interactions with our customers in the rulemaking process.
- Interested in helping? We are developing volunteer and intern programs in Air Quality.

2012 Annual Report

Prepared by:

Maricopa County Air Quality Department
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Conveniently located off the Central Avenue and Roosevelt METRO Light Rail station.

(602) 506-6010 - Main line (8am-5pm weekdays)

(602) 372-2703 - Report an air quality problem

www.maricopa.gov/aq

www.CleanAirMakeMore.com



Maricopa County
Air Quality Department